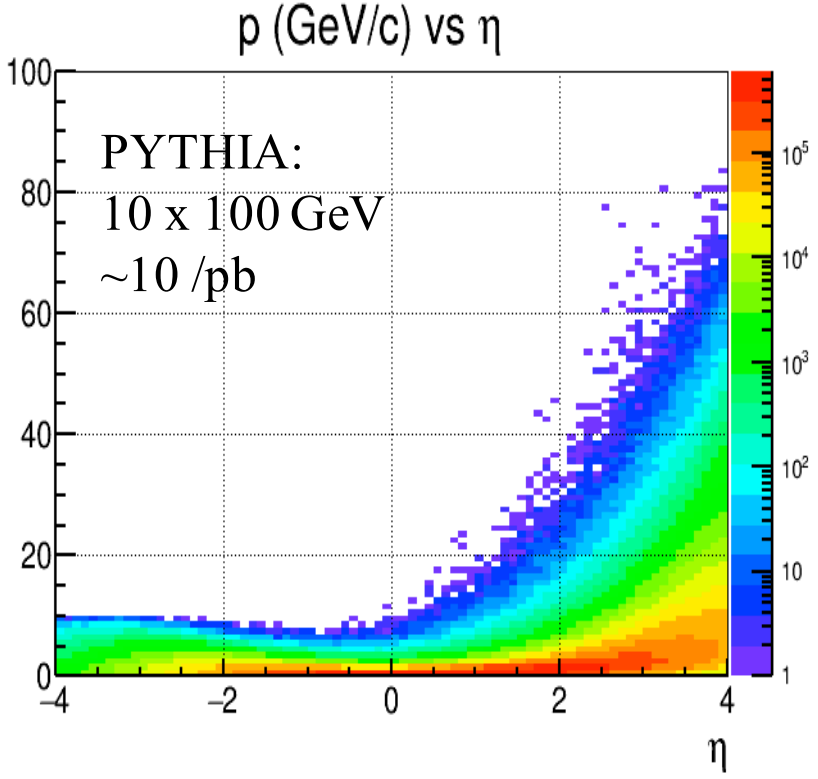
Need for a preshower in h-endcup?

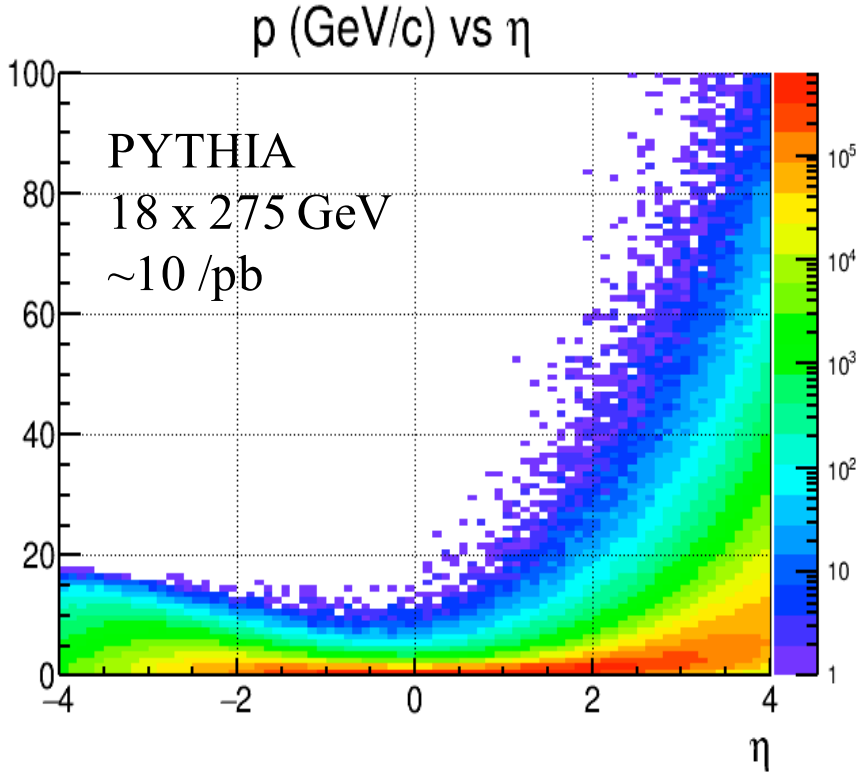
A.Bazilevsky

YR-Calorimetry TG meeting

Aug 18, 2020

π0 in SiDIS

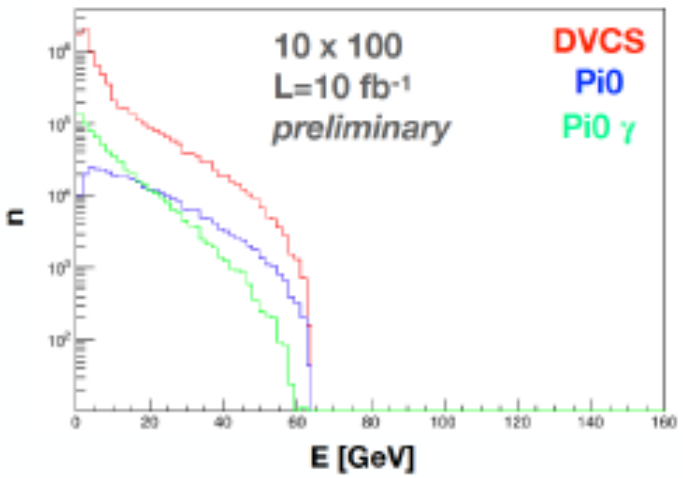


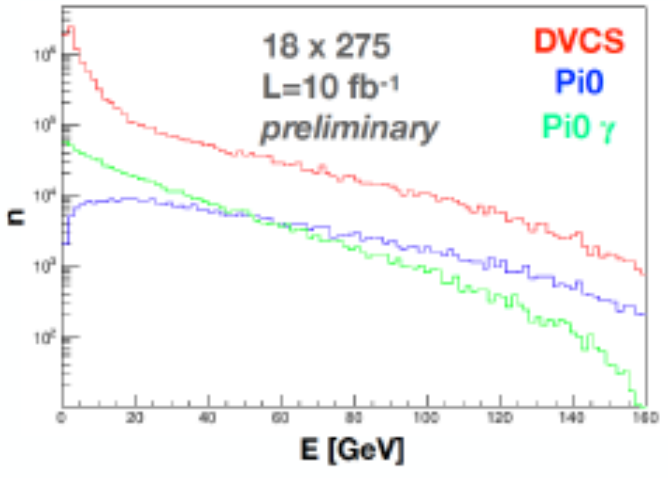


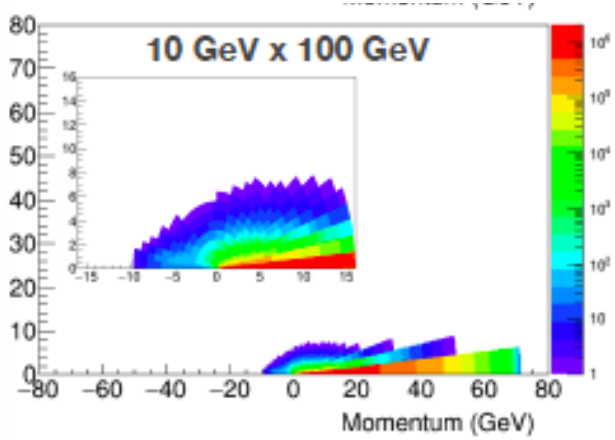
May need to measure up to 100 GeV/c and beyond

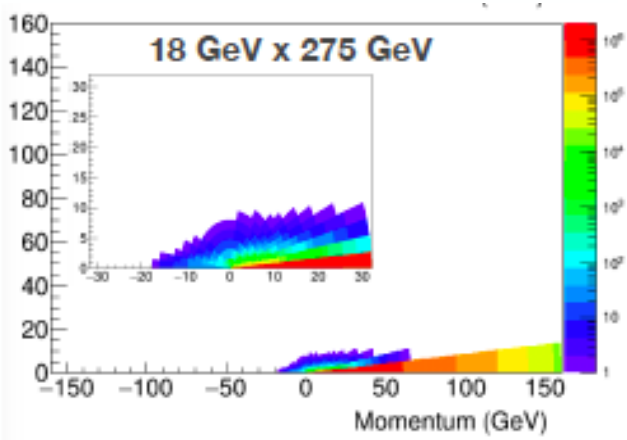
π0 in Exclusive DIS

From YR-Exclusive group
Theory calc. (Miami meeting)





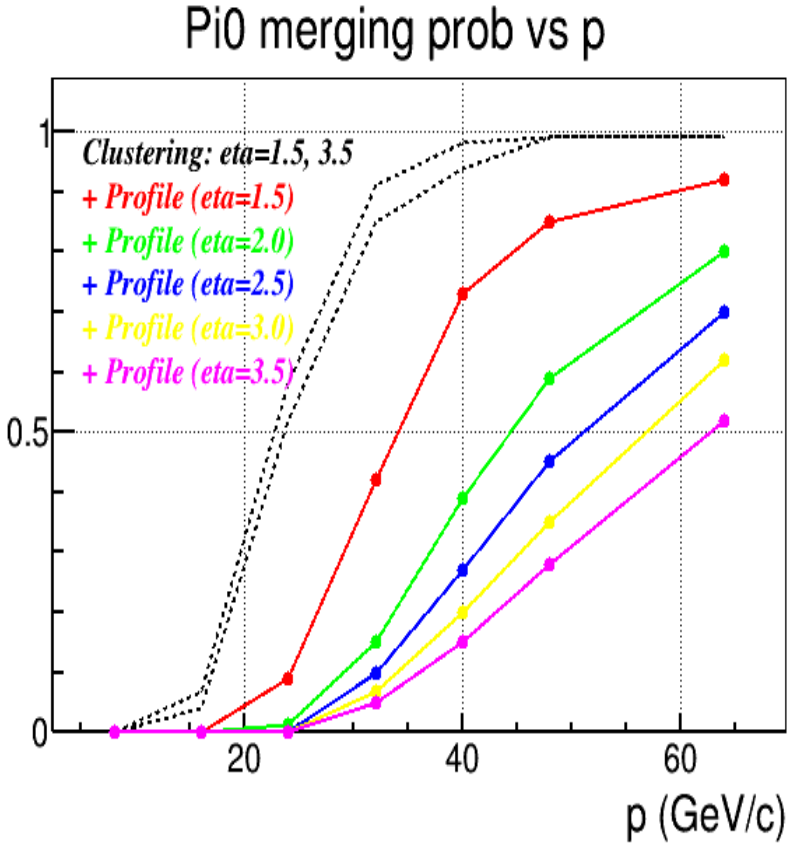




May need to measure up to 100 GeV/c and beyond

h-endcup EMCal capability

High granularity/density h-endcap EMCal:
2.5×2.5 cm^2 granularity at z=3m

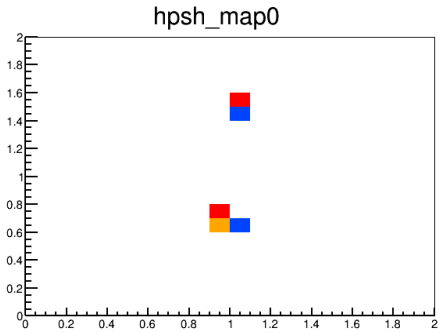


Limited EMCal performance at high p

Significant deterioration at lower rapidity (for non-projective EMCal)

For projective EMCal, all colored curves will be at or below the magenta one

Preshower



100 GeV/c π0
1x1 mm^2 pixel

Preshower with granularity <3mm would do the job

- Two photons from 150 (100) GeV/c π0 are separated by ~ 5.5mm (~8mm) in the EMCal
- Also improves photon position resolution and e/h separation

Still a lot of points to clarify

- Rapidity coverage
- Converter thickness
- Number of layers